

01
trimming the aluminum sheet at the cutting angle and with the cutting blade clearance to thereby produce a trimmed aluminum sheet with substantially no slivers.

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E3
comprising:

02
10. (Amended) A method of trimming aluminum sheet
securing [an] the aluminum sheet at a cutting angle of at least about 10 degrees adjacent a cutting blade wherein the cutting angle is measured from a plane perpendicular to a cutting direction of the cutting blade; and
trimming the aluminum sheet at the cutting angle with the cutting blade[; and recovering the] to thereby produce a trimmed aluminum sheet with substantially no slivers.

11. (Amended) The method of Claim 10, [further comprising] wherein the securing step comprises securing the aluminum sheet between a die and a pad.

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12. (Amended) The method of Claim 11, [further comprising] wherein the securing step comprises securing the aluminum sheet at a cutting angle of from about 15 to about 25 degrees.

REMARKS

Claims 1-5 and 10-17 are pending in the application. Claims 6-9 and 18-45 stand withdrawn from further consideration by the Examiner.

Inadvertent typographical errors appearing on pages 6 and 17 of the specification have been corrected by the present Amendment.

The presently claimed invention relates to methods of trimming aluminum sheet which, for example, may be used for such applications as vehicle sheet, including autobody sheet. As set forth at page 1 of the application, trimming is an important operation in the autobody sheet forming process. Such trimming operations have conventionally been used to form steel sheet having adequate edge characteristics. However, trimming methods conventionally used for steel sheet produce unacceptable cut surfaces having slivers, burrs and surface roughness when used with aluminum sheet. The production of slivers is particularly disadvantageous because they can damage both the tooling and surface finish of the product, and can contaminate the production line. Sliver production has been recognized by

automotive manufacturers as a critical problem in the utilization of aluminum in the automotive industry. Prior to the present invention, hand finishing of the formed aluminum parts and hand removal of the slivers have been employed in production practice. The presently claimed methods produce trimmed aluminum sheet that is substantially free of slivers and represent a significant improvement over conventional methods.

The drawings stand objected to because Fig. 1 does not include a legend such as "PRIOR ART". Accompanying this Amendment is a copy of Fig. 1 with proposed changes in red ink. Specifically, the legend "PRIOR ART" has been added at the bottom of Fig. 1. Approval of the proposed drawing change is requested.

Claims 1-5 and 10-17 stand rejected under 35 U.S.C. 112, second paragraph, as being indefinite. By the present Amendment, several of the claims have been changed to more clearly recite the features of the invention. Independent Claims 1 and 10 have been amended to more clearly indicate that the cutting angle is measured from a plane perpendicular to a cutting direction of the cutting blade. This arrangement is illustrated in Fig. 3, wherein the angle A is measured from a plane which is perpendicular to the cutting direction 27. Claim 1 has been further amended to recite that the aluminum sheet is secured in a die adjacent the cutting blade, with a cutting blade clearance measured between the blade and the die. This arrangement is illustrated in Fig. 3, wherein the cutting blade clearance C is measured between the blade 26 and the die 22. Claims 1 and 10 have been further amended to more clearly recite that the trimming step produces a trimmed aluminum sheet with substantially no slivers. Dependent Claims 11 and 12 have been amended to more clearly recite that the securing step corresponds with the securing step recited in independent Claim 10. It is submitted that the claims, as amended, meet the requirements of 35 U.S.C. § 112, second paragraph.

Claims 1, 10, 11 and 17 stand rejected under 35 U.S.C. § 102(b) as being anticipated by Ishibashi. The Ishibashi reference discloses a machine for cutting stacks of aluminum plates, paper sheets or plastic sheets. As shown in Fig. 1 of the reference, a cutter blade 10 moves vertically in the direction of the arrow in order to cut a stack of horizontally oriented sheets 18. As shown in Fig. 3, the cutter blade 10 includes a flank 13 that is inclined at an angle θ with respect to the

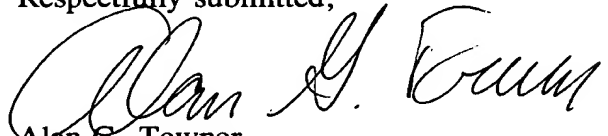
vertical travel direction of the cutter blade 10. The angle θ is from 1 degree to a maximum of 7 degrees (see column 2, lines 53-61 and Table 1). The angle θ of the flank 13 referred to by Ishibashi relates to a cutout portion of the cutter blade 10, rather than to the relative orientation of the cutting direction of the cutter blade in relation to the horizontal stack 18.

In contrast to the cutting machine disclosed by Ishibashi, the methods of the present invention, as recited in Claims 1 and 10, include the step of securing an aluminum sheet at a cutting angle of at least about 10 degrees measured from a plane perpendicular to a cutting direction of the cutting blade. This feature is not taught or suggested by Ishibashi. As shown in Fig. 1 of the reference, the cutting blade 10 moves in a vertical direction perpendicular to the horizontal sheets 18. Accordingly, it is submitted that the Ishibashi reference does not anticipate or render obvious independent Claims 1 and 10, or the claims that depend therefrom.

In view of the above amendments and remarks, it is submitted that Claims 1-5 and 10-17 meet the requirements of 35 U.S.C. § 112, second paragraph, and are patentable over the prior art of record. Accordingly, an early Notice of Allowance of this application is respectfully requested.

In the event that any outstanding matters remain in connection with this application, the Examiner is invited to telephone the undersigned at (412) 566-6109 to discuss such matters.

Respectfully submitted,



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